

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

| | | |
|---------------------------------------|---|-----------------------------|
| In the Matter of the Application of |) | |
| the Auglaize Hydroelectric Plant Unit |) | |
| 1, Unit 3, Unit 4 and Unit 5 for |) | Case No. 10 - 2363 - EL-GEN |
| Certification as an Eligible Ohio |) | Case No. 10 – 2368 - EL-GEN |
| Renewable Resource Generating |) | Case No. 10 – 2364 - EL-GEN |
| Facility |) | Case No. 10 - 2365 - EL-GEN |

DIRECT TESTIMONY OF CRAIG K. PRESTON

ON BEHALF OF
THE CITY OF BRYAN, OHIO MUNICIPAL UTILITY

October 29, 2010

I. INTRODUCTION

1 **Q. Please state your name and business address.**

2 **A.** Craig K. Preston, 841 East Edgerton Street, Bryan, Ohio, 43506

3 **Q. By whom are you employed and in what capacity?**

4 **A.** I am employed by the City of Bryan, Ohio as Assistant Director of Utilities
5 of Bryan Municipal Utilities.

6 **Q. How long have you been associated with the City of Bryan?**

7 **A.** I have been with the city utility since November 1, 1995.

8 **Q. On whose behalf are you offering testimony in this proceeding?**

9 **A.** I have been authorized to appear and testify on behalf of the City of Bryan
10 ("Bryan"), the applicant in this case.

11 **Q. Please outline your educational background and business**
12 **experience.**

13 **A.** I have an Associates Degree of Technology in Electro-Mechanical
14 Engineering. I also have numerous certificates from attending seminars
15 and conferences in utility industry over the past 15 years. Before I worked
16 for the City of Bryan I worked 13 years in industrial maintenance including
17 nearly 4 years as an Electrical Control Technician installing manufacturing
18 production lines. For Bryan I have worked as the Power Production
19 Superintendent responsible for operations of a fossil fuel generation plant
20 and run of the river hydroelectric generation plant. In 1997 I was
21 promoted to Assistant Director of Utilities responsible for day to day
22 operations of the water, electric, and communication utilities. As part of

1 that position I was the primary project manager on the \$5 million
2 reconstruction, modification and retrofit of the Auglaize Hydroelectric Plant
3 and heavily involved in most other major utility projects including
4 substations and transmission lines.

5 **Q. Are you generally familiar with the operations of a hydroelectric**
6 **facility?**

7 **A.** Yes. As Power Production Superintendent the hydroelectric plant
8 operations were my responsibility beginning in 1996. When I was
9 promoted to Assistant Director of Utilities in July of 1997 the hydroelectric
10 plant remained my responsibility because we were well into the planning
11 to increase capacity and production of the plant. These positions not only
12 required an understanding of the hydroelectric plant operation but they
13 also required working with the Federal Energy Regulatory Commission
14 and Ohio Department Natural Resources to understand their requirements
15 regarding dam safety and operations.

16 **Q. What is the purpose of your testimony in this proceeding?**

17 **A.** The purpose of my testimony is to support Bryan's Application for
18 certification of Auglaize Hydroelectric Plant ("Auglaize") Unit 1, Unit 3, Unit
19 4 and Unit 5 as a renewable energy resource.

20 **Q. Please give a brief summary of your testimony.**

21 **A.** In my testimony I give a brief background of the Auglaize facility and
22 Bryan's previous application to certify Auglaize as a renewable energy
23 resource. I then describe the numerous modifications and retrofits that

1 Auglaize Unit 1, Unit 3, Unit 4 and Unit 5 have undertaken since January
2 1, 1998. I then explain why these modifications and retrofits enable
3 Auglaize Units 1, 3, 4, and 5 to be considered a qualified resource and
4 thus eligible for renewable energy resource certification by the
5 Commission.

6 **Q. Are you sponsoring any parts of the Application?**

7 **A.** Yes, I am sponsoring the Applications for Auglaize Units 1, 3, 4 and 5.
8

9 **II. AUGLAIZE PREVIOUS APPLICATION**

10 **Q. Please Describe the Auglaize facility.**

11 **A.** The Auglaize facility is located on the Auglaize River, just south of
12 Defiance, Ohio, and is owned and operated by Bryan. The facility spans a
13 total of 688 feet with the power house alone consisting of 223 feet. The
14 dam creates a reservoir of over 10,000 feet with crest elevation of 21 feet.
15 Auglaize consists of six separate generating units that generate electricity
16 at 2,300 volts which is later stepped up to 69,000 volts.

17 **Q. Has Bryan filed an Application to certify the Auglaize plant as**
18 **renewable energy resource before?**

19 **A.** Yes. In Case No. 09-1062-EL-REN Bryan filed an application to certify all
20 6 of the Auglaize units as renewable energy resources.

21 **Q. Did the Commission approve Bryan's application?**

1 **A.** The Commission approved in part the application and denied in part the
2 application. The Commission certified Auglaize Units 2 and 6, but the
3 Commissioned denied certification for Units 1, 3, 4 and 5.

4 **Q.** **What were the grounds for the Commission’s denial of certification**
5 **for Units 1, 3, 4 and 5?**

6 **A.** While the rationale for the Commission’s denial is more fully set forth in
7 the Commission’s Finding and Order on February 4, 2010 (“February 4
8 Order”), it is my understanding that the Commission denied certification for
9 Units 1, 3, 4 and 5 because the Commission determined that the units did
10 not meet the placed-in-service requirements set forth in Section
11 4928.64(A)(1) of the Ohio Revised Code.

12 **Q.** **Are you familiar with the criteria for renewable energy resource**
13 **certification by the Commission?**

14 **A.** Yes. As set forth in Finding 2 of the February 4 Order, in order to qualify
15 as a certified eligible Ohio renewable energy resource generating facility,
16 a facility must demonstrate in its application that it has satisfied all of the
17 following criteria:

- 18 i) The generation produced by the renewable energy resource
19 generating facility can be shown to be deliverable into the state of
20 Ohio, pursuant to Section 4928.64(B)(3), Revised Code;
- 21 ii) The resource to be utilized in the generating facility is recognized as a
22 renewable energy resource pursuant to Sections 4928.64(A)(1) and
23 4928.01(A)(35), Revised Code, or a new technology that may be

1 classified by the Commission as a renewable energy resource
2 pursuant to Section 4928.64(A)(2), Revised Code; and,
3 iii) The facility must satisfy the applicable placed-in-service date,
4 delineated in Section 4928.64(A)(1), Revised Code.

5 **Q. Has the Commission found that Unit 1, 3, 4 and 5 have met this**
6 **criteria?**

7 **A.** In Finding 3 and finding 4 the Commission found that Units 1, 3, 4 and 5
8 met the first two criteria listed above respectively. However, in Finding 6
9 the Commission found Units 1, 3, 4 and 5 did not meet the third criteria.
10 Specifically, the Commission found those units do not satisfy the placed-
11 in-service requirement of Section 4928.64(A)(1) of the Ohio Revised
12 Code. For these reasons I will focus my testimony on the third criteria
13 listed by the Commission.

14 **Q. Do you agree with the Commission's finding that Units 1, 3, 4 and 5**
15 **do not satisfy placed-in-service requirement of Section 4928.64(A)(1)**
16 **of the Ohio Revised Code?**

17 **A.** No I do not. As I will explain more fully in my testimony, Section
18 4928.64(A)(1) of the Ohio Revised Code does not just contemplate
19 certification for facilities with a placed-in-service date after January 1,
20 1998, but also contemplates certification of facilities with a placed-in-
21 service date prior to January 1, 1998 if those facilities have undertaken
22 modifications and retrofits after January 1, 1998. Units 1, 3, 4 and 5 have

1 undertaken substantial modifications and retrofits after January 1, 1998
2 and thus meet the requirements of Section 4928.64(A)(1).

3 **Q. Have you discussed with Commission Staff about the possibility of**
4 **asking the Commission to reconsider its decision regarding Units 1,**
5 **3, 4 and 5?**

6 **A.** Yes. Bryan had communications with Commission Staff and Staff has
7 indicated to Bryan that although Units 1, 3, 4 and 5 were denied
8 certification, Bryan would have the opportunity to re-apply for certification
9 of those units.

10

11 **III. MODIFICATIONS AND RETROFITS**

12 **Q. Were modifications or retrofits made to Units 1, 3, 4 and 5 after**
13 **January 1, 1998?**

14 **A.** Based on my understanding of the common usage of “modification” and
15 “retrofit”, I would say yes. Merriam Webster defines retrofit as: “to furnish
16 with new or modified parts or equipment not available or considered
17 necessary at the time of manufacture.” Merriam Webster defines
18 modification as: “the making of a limited change in something.”¹ Based on
19 these definitions, Units 1, 3, 4 and 5 have had substantial retrofits and
20 modifications after January 1, 1998.

21 **Q. Can you please describe some of the modifications or retrofits made**
22 **to Units 1, 3, 4 and 5 after January 1, 1998?**

¹ Merriam Webster Online Edition. <http://www.merriam-webster.com/>

1 **A.** Yes. While the modifications and retrofits are more fully explained in the
2 Exhibits to the Applications, Units 1, 3, 4 and 5 have had the following
3 modifications and retrofits.

4 i) Between July and October of 2004 Unit 1 was disassembled and
5 refurbished to improve overall performance of the hydroelectric unit.
6 Intake gates were removed, reconstructed, replaced and a new
7 opening system was installed to further enhance output and operation
8 of the unit. On July of 2010 a rewind generator (stator and rotor)
9 was installed with 10% more copper and H class insulation. As a
10 result of the improvements, the anticipated increase in capacity for the
11 unit is over 100 kilowatts and overall energy output will increase
12 substantially.

13 ii) During April of 2002 the Auglaize facility was struck by lightning and
14 afterward Unit 3 was replaced completely. The replacement generator
15 increased the output capacity of the facility substantially.

16 iii) In 2002 Unit 4 was replaced with a refurbished unit including a
17 refurbished turbine runner, main shaft, bearings, generator, a new
18 main runner bearing and seals. A new gate opening system was also
19 installed. In 2008 the stator and rotor were replaced with a stator and
20 rotor that were rewind with 10% more copper and H class insulation.

21 iv) In 1999 Unit 5 was the first unit to be retrofitted with the new control
22 during the reconstruction of the unit's intake bay with all new wiring
23 installed. A new main shaft bearing was built and installed in 2006.

1 This unit is scheduled to have stator and rotor rewind in 2011 with an
2 additional 10% copper and H class insulation. The runner and curb ring
3 will be refurbished to increase efficiency.

4 **Q. Have these retrofits and modifications enhanced the performance of**
5 **each unit?**

6 **A.** Yes. Replacing the Allis Chalmers unit 3 with the Dominion unit increased
7 the capacity of that unit by approximately 150 kilowatts. Also because the
8 new unit is significantly more efficient than the unit it replaced, the energy
9 output has also increased. The new switchgear, controls, control wiring
10 and main shaft bearing retrofits on units 1, 4, and 5 modestly increased
11 capacity primarily due to the accurate information and temperature
12 monitoring. A more significant increase in overall energy production was
13 realized by the three units because of the accurate information, the ability
14 to remotely monitor the units and a reduction of downtime due to
15 equipment failures. The modification to the generator on unit 4 resulted in
16 an approximate increase of 15% in capacity. We anticipated a similar
17 increase for units 1 and 5 along with some additional increases due to
18 modifications to the turbine assembly that will increase the units'
19 efficiency. We will also make these modifications to unit 4. The
20 modifications to the entire Auglaize plant's civil structures during
21 reconstruction and the addition of other equipment also enhanced the
22 operation of each Auglaize unit after January 1, 1998. Those modifications

1 increased the operating head on the plant, increased available water,
2 increased run hours, and reduced down time.

3 **Q. Have these retrofits and modifications increased the overall**
4 **performance of the hydro plant?**

5 **A.** Yes. During our first two years of operation prior to the start of
6 construction we generated a 24 hour average high on August 13, 1998 of
7 2,834 kilowatts. Operating the same four units after the construction on
8 February 1, 2002 we had a high 24 hour average of 3,204 kilowatts.

9 **Q Were there other performance improvements?**

10 **A.** Yes. The first full two years we operated the Auglaize plant, 1997 and
11 1998, our annual generation averaged just over 7,200,000 kilowatt hours.
12 Construction started early spring 1999. The first two full years we operated
13 the plant with all six units available, 2005 and 2006 our annual production
14 averaged just over 11,800,000 kilowatt hours. This represents an
15 approximately 64% increase in energy production. 2005 and 2006 were
16 the last two years which all six units operated without taking an outage
17 other than general maintenance.

18 **Q. Would Units 1, 3, 4 and 5 still be in operation today had the**
19 **modifications and retrofits not been made to those units?**

20 **A.** While it is impossible to say for sure whether Units 1, 3, 4 and 5 would still
21 be in operation without the modifications and retrofits, it can be said that
22 that there is a strong likelihood that the modifications and retrofits
23 extended the operational life of the units by a substantial amount. It has

1 been estimated that the over 5 million dollars spent on the civil repairs and
2 upgrades and the mechanical upgrades has extended the life of the
3 project in excess of 20 years. We originally anticipated operating the plant
4 30 years before it would require any major repairs but now that estimate is
5 over 50 years. This is in addition to the increased performance I discussed
6 above that we received as a result of the modifications and upgrades.

7

8 **IV. QUALIFIED RESOURCE**

9 **Q. Are you familiar with the definition of Alternative Energy Resource**
10 **set forth in Section 4928.64(A)(1) of the Ohio Revised Code?**

11 **A.** Yes. Section 4928.64(A)(1) defines alternative energy resource in part as:

- 12 i) “An advanced energy resource or renewable energy resource, as
13 defined in section 4928.01 of the Revised Code that has a placed-in-
14 service date of January 1, 1998, or after;
- 15 ii) A renewable energy resource created on or after January 1, 1998, by
16 the modification or retrofit of any facility placed in service prior to
17 January 1, 1998, or;
- 18 iii) a mercantile customer-sited advanced energy resource or renewable
19 energy resource, whether new or existing, that the mercantile customer
20 commits for integration into the electric distribution utility’s demand-
21 response, energy efficiency, or peak demand reduction programs as
22 provided under division (A)(2)(c) of section 4928.66 of the Revised
23 Code.”

1 Also, the Ohio Administrative Code (“O.A.C.”) 4901:1-40-04(A)(10)
2 provides that qualified resources for meeting the renewable energy
3 resource benchmarks include “a renewable energy resource created on or
4 after January 1, 1998, by the modification or retrofit of any facility placed-
5 in-service prior to January 1, 1998.”

6 **Q. Do you believe Units 1, 3, 4 and 5 meet the definition of Alternative**
7 **Energy Resource under R.C. 4928.64(A)(1) and Qualified Resource**
8 **under O.A.C. 4901:1-40-04(A)(10)?**

9 **A.** Yes. As I have already explained Units 1, 3, 4 and 5 received substantial
10 modifications and retrofits and those modifications and retrofits occurred
11 after January 1, 1998. Therefore, I believe Units 1, 3, 4 and 5 are
12 Alternative Energy Resource and Qualified Resource under the listed
13 definitions.

14 **Q. From a practical standpoint, does it make sense to allow facilities**
15 **that have been in service prior to January 1, 1998, but have received**
16 **modifications and retrofits after that date, to qualify as a Renewable**
17 **Energy Resource?**

18 **A.** From the perspective of someone who operates an electric utility, allowing
19 facilities that receive modifications and retrofits after January 1, 1998 to
20 receive certification encourages owners of renewable facilities to upgrade
21 their facilities, and extend the expected life of those facilities.

22 **Q. Can you please explain further?**

1 **A.** Yes. With certification of a facility, the facility receives payment for the
2 renewable energy credits (“REC”) generated from the facility. If I know the
3 facility will receive REC payments, I will be more likely to make the
4 modifications and retrofits to increase capacity and efficiency in the facility.
5 Also, I will be more likely to make modifications and retrofits necessary to
6 extend the operational life of the facility. In addition, it may be easier to
7 receive financing to pay for the facility upgrades if a bank knows that the
8 facility will receive an additional revenue stream from REC payments. The
9 State and the Commission’s goal is to encourage and increase the
10 production of renewable energy generation, it does make sense to
11 incentivize generators to make their existing renewable energy generation
12 longer lasting and more efficient.

13 **Q.** **Why should modifications and retrofits allow a facility to receive**
14 **renewable energy resource certification when an electric generator**
15 **can become certified by constructing a new renewable energy**
16 **facility?**

17 **A.** For the reasons stated above, but also because modifying and retrofitting
18 a facility can be more financially and environmentally efficient than
19 constructing a whole new renewable generating facility. If I have an older
20 hydroelectric plant, it may cost less to upgrade the plant, rather than to
21 construct a plant. Also, upgrading a plant is likely to cause less
22 environmental damage than construction of a new plant. By favoring the
23 construction of new plants over upgrading old ones, the Commission risks

1 encouraging electric generators to make an uneconomic and
2 environmentally unfriendly decision.

3 **Q. In sum, do you believe Units 1, 3, 4 and 5 should be certified as a**
4 **renewable energy resource?**

5 **A.** Yes. As I have explained, Section 4928.64(A)(1) clearly allows facilities
6 placed-in-service prior to January 1, 1998, but have received modifications
7 and upgrades after January 1, 1998, to be certified as a renewable energy
8 resource. Units 1, 3, 4 and 5 have undergone substantial modifications
9 and retrofits after January 1, 1998 and thus qualify to be certified as an
10 Alternative Energy Resource under R.C. 4928.64(A)(1) and a Qualified
11 Resource under O.A.C. 4901:1-40-04(A)(10). In addition, from a policy
12 perspective, it makes sense to allow facilities that have received
13 modifications and retrofits to become certified in order to encourage those
14 facilities to make the updates necessary to operate as long and as
15 efficiently as possible.

16 **Q. Does this conclude your testimony?**

17 **A.** Yes it does.

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